

EXHIBIT E



Top 300 Organizations Granted U.S. Patents in 2017

Are more patents better?

IPO does not attempt to answer the question above. IPO publishes patent owner lists as an information service for IPO members.

This list of organizations that received the most U.S. utility patents is being published by IPO for the 35th consecutive year. It is based on data obtained from the U.S. Patent and Trademark Office.

Patents granted to parent and subsidiary companies are combined in many instances. See the end notes for more information. IPO makes reasonable efforts to avoid errors, but cannot guarantee accuracy.

18 June 2018

2017 Patent Owners Numerical Listing

Use care in interpreting the “percent change from 2016” column. The total number of patents granted by the USPTO in 2017 was 318,829, up 5 percent from 2016. The percent change for an individual organization could be affected by mergers, acquisitions, divestitures, inconsistent treatment of subsidiaries in 2016 and 2017, and many other factors.

Rank	Organization	2017 Patents	Percent Change From 2016	Rank	Organization	2017 Patents	Percent Change From 2016
1	International Business Machines Corp.	8,996	10.8	38	Cisco Technology, Inc.	989	0.2
2	Samsung Electronics Co., Ltd.	5,810	5.3	39	Koninklijke Philips N.V.	973	-14.2
3	Intel Corp.	3,726	8.4		Semiconductor Energy Laboratory Co., Ltd.	973	-8.3
4	Canon K.K.	3,664	-5.5	41	SK Hynix Inc.	938	-18.1
5	Alphabet Inc.	3,065	new	42	Texas Instruments, Inc.	923	3.9
6	General Electric Co.	2,989	14.2	43	Denso Corp.	863	18.7
7	Qualcomm, Inc.	2,728	-14.3	44	Honda Motor Co., Ltd.	854	-1.9
8	LG Electronics Inc.	2,696	10.0	45	Western Digital Corp.	837	-27.4
9	Microsoft Corp.	2,601	1.7	46	NEC Corp.	816	-7.8
10	Taiwan Semiconductor Manufacturing Co., Ltd.	2,408	6.1	47	Micron Technology, Inc.	807	-9.3
11	Samsung Display Co., Ltd.	2,266	11.3	48	Globalfoundries Inc.	782	-73.9
12	Apple, Inc.	2,225	5.6	49	The Dow Chemical Co.	765	7.8
13	Sony Corp.	2,116	-2.5	50	Oracle International Corp.	753	12.1
14	Toyota Jidosha K.K.	2,015	23.6	51	Halliburton Energy Services, Inc.	738	25.6
15	Amazon Technologies, Inc.	1,960	15.2	52	Verizon	715	-5.5
16	Toshiba Corp.	1,891	-1.5	53	Shenzhen China Star Optoelectronics Technology Co., Ltd.	709	30.5
17	Ford Global Technologies, LLC	1,876	18.4	54	Brother Kogyo K.K.	705	-31.3
18	Dell Technologies	1,681	3.2	55	Fujifilm Corp.	691	-1.2
19	Telefonaktiebolaget LM Ericsson	1,551	-0.1	56	Schlumberger Technology Corp.	680	-0.7
20	Siemens AG	1,538	3.6	57	Sharp Corp.	679	-20.5
21	Fujitsu Ltd.	1,531	-2.1	58	Infineon Technologies AG	677	8.7
22	Huawei Technologies Co., Ltd.	1,472	18.6	59	STMicroelectronics, Inc.	675	-9.2
23	United Technologies Corp.	1,423	23.0	60	Facebook, Inc.	660	33.0
24	Medtronic Inc.	1,414	-1.9	61	LG Chem., Ltd.	634	24.6
25	Seiko Epson Corp.	1,404	-17.1	62	Kyocera Document Solutions Inc.	632	-17.1
26	Nokia Corp.	1,381	new	63	HP Inc.	630	-4.1
27	BOE Technology Group Co., Ltd.	1,376	40.8	64	Olympus Corp.	613	9.5
28	Panasonic Intellectual Property Management Co., Ltd.	1,338	-4.6	65	LG Display Co., Ltd.	604	-5.6
29	Hyundai Motor Co.	1,295	20.3	66	3M Innovative Properties Co.	602	11.5
30	AT&T Corp.	1,263	-0.2		NXP USA, Inc.	602	new
31	Boeing Co.	1,171	10.2	68	Renesas Electronics Corp.	601	2.0
32	Robert Bosch GmbH	1,158	3.1	69	Caterpillar Inc.	595	15.5
33	Johnson & Johnson	1,147	18.7	70	Applied Materials, Inc.	590	-1.9
34	Mitsubishi Denki K.K.	1,142	11.5	71	Xerox Corp.	586	-30.0
35	Ricoh Co., Ltd.	1,140	-23.2	72	Electronics and Telecommunications Research Institute	585	-12.8
36	GM Global Technology Operations LLC	1,063	-4.9	73	Fuji Xerox Co., Ltd.	569	-1.9
37	Honeywell International Inc.	1,036	20.8				

www.ipo.org

**2017 Patent Owners
Numerical Listing**

Rank	Organization	2017 Patents	Percent Change From 2016	Rank	Organization	2017 Patents	Percent Change From 2016
74	Murata Manufacturing Co., Ltd.	563	16.9	116	Industrial Technology Research Institute, Taiwan	312	-19.9
75	Japan Display Inc.	553	15.6	117	Koch Industries	310	50.6
76	Corning Inc.	547	28.0	118	Massachusetts Institute of Technology	306	9.2
77	University of California, The Regents of	524	3.6	119	TE Connectivity	301	8.0
78	SAP AG	521	4.6	120	Fanuc Corp.	299	32.1
79	LG Innotek Co., Ltd.	520	11.7	121	NXP B.V.	296	2.0
80	Kyocera Corp.	509	23.8	122	Elwha LLC	294	22.4
81	Blackberry Ltd.	506	-52.0	123	InterDigital Technology Corp.	291	5.8
82	Hewlett Packard Enterprise	505	-21.8	124	Bayer Intellectual Property GmbH	290	52.4
83	Konica Minolta, Inc.	495	9.9	125	Bank of America Corp.	288	3.1
84	Hitachi, Ltd.	491	-4.3	126	Rohm Co., Ltd.	286	0.7
85	Procter & Gamble Co.	469	15.4	127	Sanofi	284	-5.6
86	DuPont	465	-10.3		Whirlpool Corp.	284	22.2
87	Commissariat a l'Energie Atomique et aux Energies Alternatives	458	3.5	129	Samsung Electro- Mechanics Co., Ltd.	281	-46.6
88	Seagate Technology, LLC	457	-14.2	130	Fuji Electric Co., Ltd.	279	19.4
89	Monsanto Technology, LLC	434	-26.0		Nvidia Corp.	279	-25.4
90	Avago Technologies General IP (Singapore) Pte. Ltd.	431	24.8	132	CNH Industrial America LLC	272	44.5
91	Mitsubishi Heavy Industries, Ltd.	427	7.0	133	Hon Hai Precision Industry Co., Ltd.	271	-57.9
92	BASF SE	415	-1.9		Schaeffler Technologies AG & Co. KG	271	29.2
93	ZTE Corp.	407	-16.0	135	Commscope Technologies LLC	270	25.6
94	Tokyo Electron Ltd.	403	3.7	136	Novartis AG	262	5.7
95	Mediatek Inc.	398	29.6	137	Juniper Networks, Inc.	259	5.4
96	Becton Dickinson and Co.	397	35.8	138	Eaton Corp.	257	16.7
	Samsung SDI Co., Ltd.	397	-9.1	139	Sumitomo Electric Industries, Ltd.	255	-5.5
98	Sprint Corp.	391	-30.7	140	Illinois Tool Works Inc.	250	10.8
99	Nike, Inc.	372	-11.6	141	Stryker Corp.	244	21.7
100	Rolls-Royce PLC	359	26.5	142	ABB Ltd.	243	-30.5
101	Nissan Motor Co., Ltd.	357	11.2		NetApp, Inc.	243	-3.3
102	Tencent Technology (Shenzhen) Co. Ltd.	354	25.1	144	Infineon Technologies Austria AG	242	18.2
	United States of America, Navy	354	5.1		Thomson Licensing S.A.	242	-7.4
104	United Microelectronics Corp.	351	7.7	146	Hitachi Automotive Systems, Ltd.	235	16.2
105	Yazaki Corp.	349	-12.9		Saint-Gobain Corp.	235	10.2
106	Futurewei Technologies, Inc.	345	0.3		Societe Nationale d'Etude et de Construction de Moteurs d'Aviation	235	18.7
107	Dolby Laboratories, Inc.	344	32.8	149	Marvell International Ltd.	231	new
108	ExxonMobil Corp.	339	-18.0	150	Disney Enterprises, Inc.	227	14.1
109	Raytheon Co.	336	-9.8	151	ASML Netherlands B.V.	223	-0.9
110	Adobe Systems Inc.	334	-5.4		Audi AG	223	10.8
111	Deere & Co.	328	27.1	153	Ebay Inc.	220	20.0
112	Roche Holdings, Inc.	323	-20.1	154	University of Texas	219	26.0
113	Boston Scientific Scimed, Inc.	320	2.8	155	Saudi Arabian Oil Co.	218	21.6
114	Empire Technology Development LLC	314	-8.9				
	Philips Lighting Holding B.V.	314	new				

www.ipo.org

**2017 Patent Owners
Numerical Listing**

Rank	Organization	2017 Patents	Percent Change From 2016	Rank	Organization	2017 Patents	Percent Change From 2016
156	Semiconductor Components Industries, LLC	217	6.5		Lockheed Martin Corp.	171	-11.1
157	Symantec Corp.	214	0.9		Panasonic Intellectual Property Corp. of America	171	-78.9
158	Nikon Corp.	212	-0.5	202	Nitto Denko Corp.	170	-17.1
159	Salesforce.com, Inc.	211	-6.2	203	LSIS Co., Ltd.	169	30.8
	Shin Etsu Chemical Co., Ltd.	211	3.3	204	Haier US Appliance Solutions, Inc.	168	new
161	Casio Computer Co. Ltd.	206	-7.3	205	King Fahd University of Petroleum and Minerals	167	new
	Cree, Inc.	206	-17.0		Mahle International GmbH	167	26.9
	Merck Patent GmbH	206	18.4	207	Johns Hopkins University	164	-1.8
	Skyworks Solutions, Inc.	206	new	208	Ecolab USA Inc.	163	14.7
165	CA, Inc.	204	10.3	209	Airbus Operations S.A.S.	162	4.9
	Stanford University	204	-19.6		Comcast Cable Communications, LLC	162	new
	Sun Patent Trust	204	42.2		Foxconn Interconnect Technology Ltd.	162	9.3
	Xperi Corp.	204	6.4		Wisconsin Alumni Research Foundation	162	-3.7
169	Merck & Co., Inc.	203	3.0	213	Nintendo Co., Ltd.	161	-28.6
170	Paypal. Inc.	202	27.7		Rambus, Inc.	161	-5.6
171	LAM Research Corp.	201	10.9	215	Cooper Technologies Co.	159	15.7
172	Airbus Operations GmbH	200	-10.5	216	Hitachi Metals Ltd.	158	-12.7
	HTC Corp.	200	-7.5		IGT	158	-56.3
174	Nichia Corp.	196	25.5	218	Nippon Steel & Sumitomo Metal Corp.	157	2.5
175	ARM Ltd.	195	40.5	219	AU Optronics Corp.	156	-42.3
	Avaya Inc.	195	3.1		Harvard College, President and Fellows	156	new
177	TDK Corp.	194	22.2	221	Daikin Industries Ltd.	155	0.0
178	Komatsu Ltd.	193	21.2	222	BAE Systems	154	-10.4
179	KLA-Tencor Corp.	192	13.5		Syngenta Participations AG	154	16.9
	NTT Docomo, Inc.	192	-12.0	224	Cardiac Pacemakers, Inc.	153	-3.9
	Red Hat, Inc.	192	-5.2	225	Accenture Global Services Ltd.	152	3.9
182	Continental Automotive GmbH	189	21.2		Northrop Grumman Systems Corp.	152	new
	Sumitomo Chemical Co., Ltd.	189	9.5	227	Aisin Seiki K.K.	151	2.0
184	Wistron Corp.	187	-69.5		Carl Zeiss SMT GmbH	151	15.2
185	Cook Medical Technologies LLC	186	-11.3		Shimadzu Corp.	151	14.6
186	Hitachi High-Technologies Corp.	185	-9.7	230	California Institute of Technology	150	-34.0
187	Osram Opto Semiconductors GmbH	184	12.5		Chevron USA Inc.	150	14.0
188	Sumitomo Wiring Systems, Ltd.	183	24.6		Globus Medical Inc.	150	2.7
189	Semiconductor Manufacturing International (Shanghai) Corp.	182	18.7		Marvell World Trade Ltd.	150	new
190	Lenovo (Singapore) Pte. Ltd.	179	-2.8		Nielsen	150	-12.7
	Rockwell Automation Technologies, Inc.	179	21.2	235	L'Oreal S.A.	149	23.5
192	Thales	178	12.9		Panasonic Corp.	149	2.7
193	Aktiebolaget SKF	177	15.8	237	Here Global B.V.	148	19.6
194	Bally Gaming, Inc.	176	-19.9		Omron Corp.	148	10.8
	Tsinghua University	176	-1.7		Synaptics, Inc.	148	new
196	Bayerische Motoren Werke AG	174	28.2				
197	Echostar Technologies LLC	172	14.5				
	Rockwell Collins, Inc.	172	21.5				
199	Bridgestone Corp.	171	-15.2				

**2017 Patent Owners
Numerical Listing**

			Percent Change				Percent Change
Rank	Organization	2017 Patents	From 2016	Rank	Organization	2017 Patents	From 2016
240	Macronix International Co., Ltd.	147	-59.9	282	Centre National de la Recherche Scientifique - CNRS	126	-1.6
	Shimano Inc.	147	-6.1		Cypress Semiconductor Corp.	126	-32.5
	ZF Friedrichshafen, AG	147	-11.6		Stanley Black & Decker, Inc.	126	4.0
243	Kobe Steel, Ltd.	145	13.8	285	Qorvo US, Inc.	125	new
244	Delta Electronics Inc.	144	8.3	286	Arris Enterprises, LLC	124	8.9
	Jtekt Corp.	144	-4.9		T-Mobile, USA, Inc.	124	new
246	Innolux Corp.	143	new		UOP	124	-44.4
247	Evonik Degussa GmbH	142	new	289	Delphi Technologies, Inc.	121	new
	Toyoda Jidoshokki	142	new		HRL Laboratories, LLC	121	4.1
	Seisakusho K.K.			291	Broadcom Corp.	119	-590.8
	United States of America, Army	142	4.2		Sumitomo Rubber Industries, Ltd.	119	-3.4
250	Borgwarner Inc.	141	new		Intuitive Surgical Operations, Inc.	118	-6.8
	Kawasaki Jukogyo K.K.	141	-6.4	294	United States of America, National Aeronautics and Space Administration	117	1.7
252	Acushnet Co.	140	10.0		DSM IP Assets B.V.	116	-24.1
	Bose Corp.	140	new		NGK Spark Plug Co., Ltd.	116	-6.0
	Compagnie Generale des Etablissements Michelin	140	19.3		University of South Florida	116	1.7
255	Nuance Communications, Inc.	139	4.3	298	Acer Inc.	115	4.3
256	Analog Devices, Inc.	138	2.2		General Hospital Corp.	115	new
	Xiaomi Inc.	138	new		Hitachi Kokusai Electric Inc.	115	-18.3
258	Advanced Micro Devices, Inc.	137	-54.7		JFE Steel Corp.	115	new
	Hyundai Mobis, Co., Ltd.	137	13.9		Smith & Nephew, Inc.	115	-85.2
260	Nestec, S.A.	136	-22.1				
	Open Invention Network, LLC	136	11.8				
	Toray Industries Inc.	136	5.1				
263	Boston Scientific Neuromodulation Corp.	134	-30.6				
	Xilinx, Inc.	134	-15.7				
265	Lenovo (Beijing) Ltd.	133	new				
	Sonos, Inc.	133	new				
267	Abbott Cardiovascular Systems, Inc.	132	-0.8				
	United States of America, Department of Health & Human Services	132	-11.4				
269	Alibaba Group Holding Ltd.	130	new				
	Lenovo Enterprise Solutions (Singapore) Pte. Ltd.	130	-56.2				
271	Bristol-Myers Squibb Co.	129	14.0				
	Citrix Systems, Inc.	129	-33.3				
	Huawei Device Co., Ltd.	129	-17.1				
	Yamaha Motor Co., Ltd.	129	10.1				
275	Colgate-Palmolive Co.	128	new				
	Excalibur IP, LLC	128	new				
	Motorola Solutions, Inc.	128	-37.5				
	Rovi Guides, Inc.	128	new				
	University of Michigan	128	-10.9				
280	Ciena Corp.	127	new				
	NTN Corp.	127	2.4				

2017 Patent Owners

Alphabetical Listing

Use care in interpreting the “percent change from 2016” column. The total number of utility patents granted by the USPTO in 2017 was 318,829, up 5 percent from 2016. The percent change for an individual organization might be affected by mergers, acquisitions, divestitures, inconsistent treatment of subsidiaries in 2016 and 2017, and other factors.

Rank	Organization	2017 Patents	Percent Change From 2016	Rank	Organization	2017 Patents	Percent Change From 2016
66	3M Innovative Properties Co.	602	11.5	263	Boston Scientific Neuromodulation Corp.	134	-30.6
142	ABB Ltd.	243	-30.5	113	Boston Scientific Scimed, Inc.	320	2.8
267	Abbott Cardiovascular Systems, Inc.	132	-0.8	199	Bridgestone Corp.	171	-15.2
225	Accenture Global Services Ltd.	152	3.9	271	Bristol-Myers Squibb Co.	129	14.0
298	Acer Inc.	115	4.3	291	Broadcom Corp.	119	-590.8
252	Acushnet Co.	140	10.0	54	Brother Kogyo K.K.	705	-31.3
110	Adobe Systems Inc.	334	-5.4	165	CA, Inc.	204	10.3
258	Advanced Micro Devices, Inc.	137	-54.7	230	California Institute of Technology	150	-34.0
172	Airbus Operations GmbH	200	-10.5	4	Canon K.K.	3,664	-5.5
209	Airbus Operations S.A.S.	162	4.9	224	Cardiac Pacemakers, Inc.	153	-3.9
227	Aisin Seiki K.K.	151	2.0	227	Carl Zeiss SMT GmbH	151	15.2
193	Aktiebolaget SKF	177	15.8	161	Casio Computer Co. Ltd.	206	-7.3
269	Alibaba Group Holding Ltd.	130	new	69	Caterpillar Inc.	595	15.5
5	Alphabet Inc.	3,065	new	282	Centre National de la Recherche Scientifique - CNRS	126	-1.6
15	Amazon Technologies, Inc.	1,960	15.2	230	Chevron USA Inc.	150	14.0
256	Analog Devices, Inc.	138	2.2	280	Ciena Corp.	127	new
12	Apple, Inc.	2,225	5.6	38	Cisco Technology, Inc.	989	0.2
70	Applied Materials, Inc.	590	-1.9	271	Citrix Systems, Inc.	129	-33.3
175	ARM Ltd.	195	40.5	132	CNH Industrial America LLC	272	44.5
286	Arris Enterprises, LLC	124	8.9	275	Colgate-Palmolive Co.	128	new
151	ASML Netherlands B.V.	223	-0.9	209	Comcast Cable Communications, LLC	162	new
30	AT&T Corp.	1,263	-0.2	87	Commissariat a l'Energie Atomique et aux Energies Alternatives	458	3.5
219	AU Optronics Corp.	156	-42.3	135	Commscope Technologies LLC	270	25.6
151	Audi AG	223	10.8	252	Compagnie Generale des Etablissements Michelin	140	19.3
90	Avago Technologies General IP (Singapore) Pte. Ltd.	431	24.8	182	Continental Automotive GmbH	189	21.2
175	Avaya Inc.	195	3.1	185	Cook Medical Technologies LLC	186	-11.3
222	BAE Systems	154	-10.4	215	Cooper Technologies Co.	159	15.7
194	Bally Gaming, Inc.	176	-19.9	76	Corning Inc.	547	28.0
125	Bank of America Corp.	288	3.1	161	Cree, Inc.	206	-17.0
92	BASF SE	415	-1.9	282	Cypress Semiconductor Corp.	126	-32.5
124	Bayer Intellectual Property GmbH	290	52.4	221	Daikin Industries Ltd.	155	0.0
196	Bayerische Motoren Werke AG	174	28.2	111	Deere & Co.	328	27.1
96	Becton Dickinson and Co.	397	35.8	18	Dell Technologies	1,681	3.2
81	Blackberry Ltd.	506	-52.0	289	Delphi Technologies, Inc.	121	new
27	BOE Technology Group Co., Ltd.	1,376	40.8				
31	Boeing Co.	1,171	10.2				
250	Borgwarner Inc.	141	new				
252	Bose Corp.	140	new				

**2017 Patent Owners
Alphabetical Listing**

Rank	Organization	2017 Patents	Percent Change From 2016	Rank	Organization	2017 Patents	Percent Change From 2016
244	Delta Electronics Inc.	144	8.3	133	Hon Hai Precision Industry Co., Ltd.	271	-57.9
43	Denso Corp.	863	18.7	44	Honda Motor Co., Ltd.	854	-1.9
150	Disney Enterprises, Inc.	227	14.1	37	Honeywell International Inc.	1,036	20.8
107	Dolby Laboratories, Inc.	344	32.8	63	HP Inc.	630	-4.1
295	DSM IP Assets B.V.	116	-24.1	289	HRL Laboratories, LLC	121	4.1
86	DuPont	465	-10.3	172	HTC Corp.	200	-7.5
138	Eaton Corp.	257	16.7	271	Huawei Device Co., Ltd.	129	-17.1
153	Ebay Inc.	220	20.0	22	Huawei Technologies Co., Ltd.	1,472	18.6
197	Echostar Technologies LLC	172	14.5	258	Hyundai Mobis, Co., Ltd.	137	13.9
208	Ecolab USA Inc.	163	14.7	29	Hyundai Motor Co.	1,295	20.3
72	Electronics and Telecommunications Research Institute	585	-12.8	140	Illinois Tool Works Inc.	250	10.8
122	Elwha LLC	294	22.4	116	Industrial Technology Research Institute, Taiwan	312	-19.9
114	Empire Technology Development LLC	314	-8.9	58	Infineon Technologies AG	677	8.7
247	Evonik Degussa GmbH	142	new	144	Infineon Technologies Austria AG	242	18.2
275	Excalibur IP, LLC	128	new	246	Innolux Corp.	143	new
108	ExxonMobil Corp.	339	-18.0	3	Intel Corp.	3,726	8.4
60	Facebook, Inc.	660	33.0	123	InterDigital Technology Corp.	291	5.8
120	Fanuc Corp.	299	32.1	1	International Business Machines Corp.	8,996	10.8
17	Ford Global Technologies, LLC	1,876	18.4	216	IGT	158	-56.3
209	Foxconn Interconnect Technology Ltd.	162	9.3	293	Intuitive Surgical Operations, Inc.	118	-6.8
130	Fuji Electric Co., Ltd.	279	19.4	75	Japan Display Inc.	553	15.6
73	Fuji Xerox Co., Ltd.	569	-1.9	298	JFE Steel Corp.	115	new
55	Fujifilm Corp.	691	-1.2	207	Johns Hopkins University	164	-1.8
21	Fujitsu Ltd.	1,531	-2.1	33	Johnson & Johnson	1,147	18.7
106	Futurewei Technologies, Inc.	345	0.3	244	Jtekt Corp.	144	-4.9
6	General Electric Co.	2,989	14.2	137	Juniper Networks, Inc.	259	5.4
298	General Hospital Corp.	115	new	250	Kawasaki Jukogyo K.K.	141	-6.4
48	Globalfoundries Inc.	782	-73.9	205	King Fahd University of Petroleum and Minerals	167	new
230	Globus Medical Inc.	150	2.7	179	KLA-Tencor Corp.	192	13.5
36	GM Global Technology Operations LLC	1,063	-4.9	243	Kobe Steel, Ltd.	145	13.8
204	Haier US Appliance Solutions, Inc.	168	new	117	Koch Industries	310	50.6
51	Halliburton Energy Services, Inc.	738	25.6	178	Komatsu Ltd.	193	21.2
219	Harvard College, President and Fellows	156	new	83	Konica Minolta, Inc.	495	9.9
237	Here Global B.V.	148	19.6	39	Koninklijke Philips N.V.	973	-14.2
82	Hewlett Packard Enterprise	505	-21.8	80	Kyocera Corp.	509	23.8
146	Hitachi Automotive Systems, Ltd.	235	16.2	62	Kyocera Document Solutions Inc.	632	-17.1
186	Hitachi High-Technologies Corp.	185	-9.7	171	LAM Research Corp.	201	10.9
298	Hitachi Kokusai Electric Inc.	115	-18.3	265	Lenovo (Beijing) Ltd.	133	new
216	Hitachi Metals Ltd.	158	-12.7	190	Lenovo (Singapore) Pte. Ltd.	179	-2.8
84	Hitachi, Ltd.	491	-4.3	269	Lenovo Enterprise Solutions (Singapore) Pte. Ltd.	130	-56.2
				61	LG Chem., Ltd.	634	24.6

**2017 Patent Owners
Alphabetical Listing**

Rank	Organization	2017 Patents	Percent Change From 2016	Rank	Organization	2017 Patents	Percent Change From 2016
65	LG Display Co., Ltd.	604	-5.6	237	Omron Corp.	148	10.8
8	LG Electronics Inc.	2,696	10.0	260	Open Invention Network, LLC	136	11.8
79	LG Innotek Co., Ltd.	520	11.7	50	Oracle International Corp.	753	12.1
199	Lockheed Martin Corp.	171	-11.1	187	Osram Opto Semiconductors GmbH	184	12.5
235	L'Oreal S.A.	149	23.5	235	Panasonic Corp.	149	2.7
203	LSIS Co., Ltd.	169	30.8	199	Panasonic Intellectual Property Corp. of America	171	-78.9
240	Macronix International Co., Ltd.	147	-59.9	28	Panasonic Intellectual Property Management Co., Ltd.	1,338	-4.6
205	Mahle International GmbH	167	26.9	170	Paypal. Inc.	202	27.7
149	Marvell International Ltd.	231	new	114	Philips Lighting Holding B.V.	314	new
230	Marvell World Trade Ltd.	150	new	85	Procter & Gamble Co.	469	15.4
118	Massachusetts Institute of Technology	306	9.2	285	Qorvo US, Inc.	125	new
95	Mediatek Inc.	398	29.6	7	Qualcomm, Inc.	2,728	-14.3
24	Medtronic Inc.	1,414	-1.9	213	Rambus, Inc.	161	-5.6
169	Merck & Co., Inc.	203	3.0	109	Raytheon Co.	336	-9.8
161	Merck Patent GmbH	206	18.4	179	Red Hat, Inc.	192	-5.2
47	Micron Technology, Inc.	807	-9.3	68	Renesas Electronics Corp.	601	2.0
9	Microsoft Corp.	2,601	1.7	35	Ricoh Co., Ltd.	1,140	-23.2
34	Mitsubishi Denki K.K.	1,142	11.5	32	Robert Bosch GmbH	1,158	3.1
91	Mitsubishi Heavy Industries, Ltd.	427	7.0	112	Roche Holdings, Inc.	323	-20.1
89	Monsanto Technology, LLC	434	-26.0	190	Rockwell Automation Technologies, Inc.	179	21.2
275	Motorola Solutions, Inc.	128	-37.5	197	Rockwell Collins, Inc.	172	21.5
74	Murata Manufacturing Co., Ltd.	563	16.9	126	Rohm Co., Ltd.	286	0.7
46	NEC Corp.	816	-7.8	100	Rolls-Royce PLC	359	26.5
260	Nestec, S.A.	136	-22.1	275	Rovi Guides, Inc.	128	new
142	NetApp, Inc.	243	-3.3	146	Saint-Gobain Corp.	235	10.2
295	NGK Spark Plug Co., Ltd.	116	-6.0	159	Salesforce.com, Inc.	211	-6.2
174	Nichia Corp.	196	25.5	11	Samsung Display Co., Ltd.	2,266	11.3
230	Nielsen	150	-12.7	129	Samsung Electro-Mechanics Co., Ltd.	281	-46.6
99	Nike, Inc.	372	-11.6	2	Samsung Electronics Co., Ltd.	5,810	5.3
158	Nikon Corp.	212	-0.5	96	Samsung SDI Co., Ltd.	397	-9.1
213	Nintendo Co., Ltd.	161	-28.6	127	Sanofi	284	-5.6
218	Nippon Steel & Sumitomo Metal Corp.	157	2.5	78	SAP AG	521	4.6
101	Nissan Motor Co., Ltd.	357	11.2	155	Saudi Arabian Oil Co.	218	21.6
202	Nitto Denko Corp.	170	-17.1	133	Schaeffler Technologies AG & Co. KG	271	29.2
26	Nokia Corp.	1,381	new	56	Schlumberger Technology Corp.	680	-0.7
225	Northrop Grumman Systems Corp.	152	new	88	Seagate Technology, LLC	457	-14.2
136	Novartis AG	262	5.7	25	Seiko Epson Corp.	1,404	-17.1
280	NTN Corp.	127	2.4	156	Semiconductor Components Industries, LLC	217	6.5
179	NTT Docomo, Inc.	192	-12.0	39	Semiconductor Energy Laboratory Co., Ltd.	973	-8.3
255	Nuance Communications, Inc.	139	4.3	189	Semiconductor Manufacturing International (Shanghai) Corp.	182	18.7
130	Nvidia Corp.	279	-25.4				
121	NXP B.V.	296	2.0				
66	NXP USA, Inc.	602	new				
64	Olympus Corp.	613	9.5				

**2017 Patent Owners
Alphabetical Listing**

		2017	Percent			2017	Percent
Rank	Organization	Patents	Change	Rank	Organization	Patents	Change
			From 2016				From 2016
57	Sharp Corp.	679	-20.5	14	Toyota Jidosha K.K.	2,015	23.6
53	Shenzhen China Star Optoelectronics Technology Co., Ltd.	709	30.5	194	Tsinghua University	176	-1.7
227	Shimadzu Corp.	151	14.6	104	United Microelectronics Corp.	351	7.7
240	Shimano Inc.	147	-6.1	247	United States of America, Army	142	4.2
159	Shin Etsu Chemical Co., Ltd.	211	3.3	267	United States of America, Department of Health & Human Services	132	-11.4
20	Siemens AG	1,538	3.6	294	United States of America, National Aeronautics and Space Administration	117	1.7
41	SK Hynix Inc.	938	-18.1	102	United States of America, Navy	354	5.1
161	Skyworks Solutions, Inc.	206	new	23	United Technologies Corp.	1,423	23.0
298	Smith & Nephew, Inc.	115	-85.2	77	University of California, The Regents of	524	3.6
146	Societe Nationale d'Etude et de Construction de Moteurs d'Aviation	235	18.7	275	University of Michigan	128	-10.9
265	Sonos, Inc.	133	new	295	University of South Florida	116	1.7
13	Sony Corp.	2,116	-2.5	154	University of Texas	219	26.0
98	Sprint Corp.	391	-30.7	286	UOP	124	-44.4
165	Stanford University	204	-19.6	52	Verizon	715	-5.5
282	Stanley Black & Decker, Inc.	126	4.0	45	Western Digital Corp.	837	-27.4
59	STMicroelectronics, Inc.	675	-9.2	127	Whirlpool Corp.	284	22.2
141	Stryker Corp.	244	21.7	209	Wisconsin Alumni Research Foundation	162	-3.7
182	Sumitomo Chemical Co., Ltd.	189	9.5	184	Wistron Corp.	187	-69.5
139	Sumitomo Electric Industries, Ltd.	255	-5.5	71	Xerox Corp.	586	-30.0
291	Sumitomo Rubber Industries, Ltd.	119	-3.4	256	Xiaomi Inc.	138	new
188	Sumitomo Wiring Systems, Ltd.	183	24.6	263	Xilinx, Inc.	134	-15.7
165	Sun Patent Trust	204	42.2	165	Xperi Corp.	204	6.4
157	Symantec Corp.	214	0.9	271	Yamaha Motor Co., Ltd.	129	10.1
237	Synaptics, Inc.	148	new	105	Yazaki Corp.	349	-12.9
222	Syngenta Participations AG	154	16.9	240	ZF Friedrichshafen, AG	147	-11.6
10	Taiwan Semiconductor Manufacturing Co., Ltd.	2,408	6.1	93	ZTE Corp.	407	-16.0
177	TDK Corp.	194	22.2				
119	TE Connectivity	301	8.0				
19	Telefonaktiebolaget LM Ericsson	1,551	-0.1				
102	Tencent Technology (Shenzhen) Co. Ltd.	354	25.1				
42	Texas Instruments, Inc.	923	3.9				
192	Thales	178	12.9				
49	The Dow Chemical Co.	765	7.8				
144	Thomson Licensing S.A.	242	-7.4				
286	T-Mobile, USA, Inc.	124	new				
94	Tokyo Electron Ltd.	403	3.7				
260	Toray Industries Inc.	136	5.1				
16	Toshiba Corp.	1,891	-1.5				
247	Toyoda Jidoshokki Seisakusho K.K.	142	new				

END NOTES:

1. “New” in the percent change column indicates that the company was not on the Top 300 list in 2016.
2. The number of patents granted does not necessarily indicate the value of a company’s technology, the effectiveness of its R&D, or whether it will be profitable. The number of patents per company varies widely from industry to industry and from company to company within an industry.
3. This report was compiled by IPO from data provided by the U.S. Patent and Trademark Office. Patents reported are utility patents granted during calendar year 2017 that listed the organization or a subsidiary as the owner on the printed patent document. Patents in the name of a majority-owned subsidiary are included with patents of the parent organization if the organization asked IPO to include subsidiaries. Patents that were granted to two or more organizations jointly are attributed to the organization listed first on the patent document.
4. The number of utility patents granted by the USPTO increased to 318,829 in 2017 from 303,051 in 2016.
5. IPO has published this report annually since 1984 as a service to its members. For annual lists, go to www.ipo.org/top-300.
6. For next year’s list, IPO will include patents of majority-owned subsidiaries under the name of the parent if the parent provides the names of such subsidiaries to IPO at info@ipo.org by 1 March 2019.